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AIRTOUCH™
Communications
The new name for PacTel

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May 11, 1994

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MAY 11 1994

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

EX PARTE

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW, Room 222
Washington, DC 20554

RE: PR Docket 93-61
Automatic Vehicle Monitoring (AVM) Systems

Dear Mr. Caton:

On Tuesday, May 10, 1994, I, on behalf of AirTouch Teletrac, met with Ruth Milkman, Legal Advisor to Chairman Hundt, regarding the Automatic Vehicle Monitoring issues being addressed in the proceeding indicated above. We discussed the information set forth in the attached documents. Please associate this material with the above-referenced proceeding.

Two copies of this notice were submitted to the Secretary of the FCC in accordance with Section 1.1206(a)(1) of the Commission's Rules.

Please stamp and return the provided copy to confirm your receipt. Please contact me at 202-293-4960 should you have any questions or require additional information concerning this matter.

Sincerely,

Kathleen Q. Abernathy

Attachment

cc: Ruth Milkman

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AIRTOUCH TELETRAC FCC PRESENTATION

Teletrac understands the issues associated with use of the 902 to 928 MHz frequency band.

The multi-user environment forces compromises among the users for equitable and efficient use of the spectrum.

- A heirarchical regime for spectrum use has been established
- In an ideal environment all users would get what they want
- In a multiple -use environment compromises are necessary
- The basic principles and rules that govern licensed and unlicensed spectrum users are well established and have been in place for years
- Users of the spectrum take on the responsibilities (and the benefits) associated with operating in this band when they choose to do so
- Rules must be adapted when necessary in response to technological and market developments (hence, the existence of interim rules and the need for permanent rules)

OVERVIEW

- Teletrac is in commercial operation today in:

-	Los Angeles	(3½ yrs)	-	Houston	(1½ yrs)
-	Detroit	(2½ yrs)	-	Dallas/Ft. Worth	(2 yrs)
-	Chicago	(3 yrs)		Miami	(2 yrs)

- Services are:

Consumer	Commercial
Stolen	Fleet Management
Emergency Roadside	Panic
Future Peace of Mind Location	Trailer
Remote Door Lock/Unlock	Status Messaging
Mobile Yellow Pages	Stolen
	Law Enforcement

COMMERCIAL MARKET

Today's Services

Panic Button

- Silent alerting of emergency (e.g., hijack)
- Workstation indicates panic alert. If off-line, Teletrac notifies customer
- Installed in cab: floor, gear shift, dash, etc.
- Remote panic for drivers that leave vehicle

Trailer

- Portable or hidden unit installed on trailer
- Motion detector initiates alert on unattached trailer
- Door trigger can be used to detect break-in

Stolen

- Driver arms vehicle
- Unauthorized movement sends alert (punched ignition, hot-wiring, etc.)
- If stolen with key, call in location still available [via touch tone telephone]

LAW ENFORCEMENT USES TELETRAC

- Teletrac's law enforcement customers include:
  - Federal Bureau of Investigation (FBI)
  - Drug Enforcement Administration (DEA)
  - Bureau of Alcohol, Tobacco and Firearms
  - U.S. Customs
  - Los Angeles County Sheriff
  - California Highway Patrol
  - Detroit Police Department
  - Michigan State Police
  - Illinois State Police
  - Many other local law enforcement agencies in Teletrac metro areas
- How do law enforcement agencies use Teletrac?
  - Tracking movements of convicted criminals who may strike again (e.g., child molester)
  - Breaking up chop shops and car theft rings
  - Sting operations by equipping an attractive car with a Teletrac device and watching for possible theft
  - Using Teletrac's history files to link suspects to specific crime scenes

CONSUMER SERVICES

- Stolen Vehicle
  -a signal goes off in Teletrac's control center when a Teletrac equipped vehicle is stolen

    -- speed of car
    -- direction
    -- cross street
    -- accuracy to 100 feet

  -Police dispatchers also have Teletrac software
  -Police have apprehended criminals, including car-jackers, using Teletrac
  -100% recovery of car-jacked vehicles
  -93% stolen vehicle recovery

- Emergency Roadside

  -Customer pushes button to indicate vehicle problem
  -Vehicle is immediately seen on computer map by Teletrac operator
  -Teletrac sends tow truck and alerts customer that help is on the way
-Customer never has to leave vehicle

COMMON MISUNDERSTANDINGS REGARDING PART 15 CO-EXISTENCE WITH LMS

- The purpose of this proceeding is to finalize the rules for LMS, not Part 15

  No change in the legal standing of devices operating under part 15 rules is warranted

- Part 15 can continue to operate in the entire 902-928 MHz band on a secondary basis as they do today under existing rules.

  Need to tolerate interference from licensed services

  Must not cause harmful interference to licensed services

- Interference incidents to date have been isolated and few

- LMS systems co-exist with Part 15 devices today, providing real world data on compatibility

Teletrac has proposed a compromise.

A minimal set of rules are proposed that assure a stable operating environment for all users of the spectrum while allowing innovation and flexibility in implementation.

- Licensed use of 10 MHz on a shared basis for the first 2 LMS systems to construct
- Part of the spectrum is dedicated (not shared) to each system to recover service quality and capacity lost due to sharing
- Subsequent co-channel LMS systems must prove non-interference
- AVI systems get secondary use of LMS segment (lower 10 MHz)
- LMS and AVI systems could get co-primary use of upper 16 MHz
- Part 15 devices continue to have secondary use of all 26 MHz
- Existing AVI systems grandfathered

TELETRAC SHARING PROPOSAL AND PART 15 ISSUES

- New proposal decreases the spectrum allocation intended for wide area multilateration systems (such as Teletrac) from 16 MHz to 10 MHz and allows two systems to share the spectrum within each service area

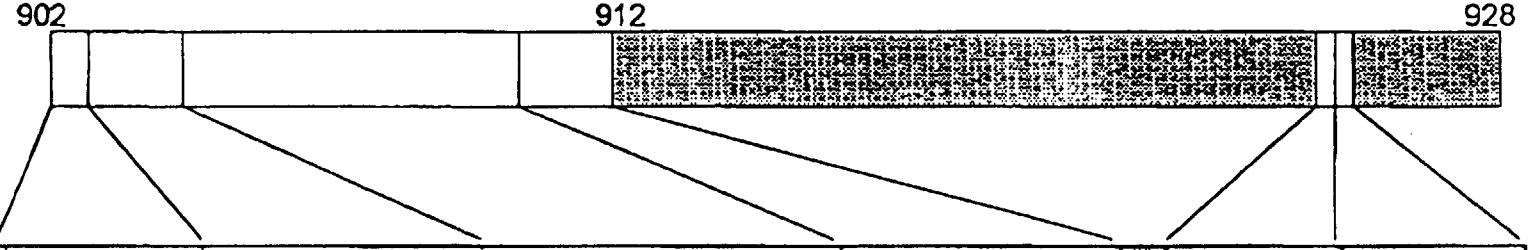
- All wide area multilateration systems will be located at one end of the spectrum thus freeing 16 MHz for narrowband systems and Part 15 devices

- Even assuming there is increased possibility of interference between Part 15 and wide area systems as more systems are deployed, by locating wide area providers at one end of the band, Part 15 can target their future devices to operate in the rest of the spectrum

- This approach best balances all of the competing interests by implementing a sharing scheme that allows multiple users to operate in congested spectrum

Compromise allocation for the LMS segment.

The plan reduces the spectrum allocated for LMS systems from 16 MHz to 10 MHz and includes sharing of 6.5 Mhz.



FREQ	902.0 902.5	902.5 - 904.0	904.0 - 910.5	910.5 - 912.0	924.89 925.14	925.14 925.39
USE	NBFL Upper Segment	WBFL2	LOCATION (shared)	WBFL1	NBFL1	NBFL2
B/W	500 kHz	1.5 MHz	6.5 MHz	1.5 MHz	250 kHz	250 kHz

NOTE: If either system does not use a wideband forward link, it has the option of using 8 MHz of contiguous spectrum (LOCATION sub-segment PLUS their appropriate WBFL sub-segment).

Definition of Sub-Segment Terms:

- LOCATION — Shared Reverse Link for location, data and voice
- NBFL1 — Narrowband Forward Link for System 1
- WBFL1 — Wideband Forward Link for System 1
- NBFL2 — Narrowband Forward Link for System 2
- WBFL2 — Wideband Forward Link for System 2.
- NBFL Upper Segment is for users of the 912 to 928 MHz segment.

Proposed Limitations on Signal Power and Duration

Power limitations on mobile unit signals and time limitations on other signals within the shared sub-segment are needed to maintain tolerable interference levels.

Transmitting Station	Max. Power (Watts ERP)	Maximum Duration
Mobile *	10	1 second
Base Station	500	Continuous
Control Station	10	1 second
Calibration Station	500	50 msec. (1% duty cycle)**
FXOT (Secondary)	10	1 second

* Except data or emergency voice which can transmit up to 30 seconds if limited to 1 Watt ERP.

** System 1 gets first 50 msec of odd numbered seconds (GPS time)

System 2 gets first 50 msec of even numbered seconds (GPS time)

SPECIFICS OF SHARING PROPOSAL

- Must adopt minimum sharing rules for wideband LMS systems to provide sufficient certainty to allow widespread deployment of these services

- The sharing rules consist of:

  - Time synchronization for "housekeeping" transmissions in the return (mobile-to-base station) link;

  - Allocation of separate spectrum for forward link signals to avoid service degradation; and

    - The first two wideband LMS systems to construct and operate would receive co-channel protection.

SPECIFICS OF SHARING PROPOSAL

- Sharing proposal technically feasible with two providers of wideband LMS systems because it is limited to reverse channel sharing.

- Since reducing amount of spectrum available for wideband systems, need contiguous wideband forward link to maintain system flexibility, reduce infrastructure costs and preserve service quality and stimulate innovation and competition.

- At a minimum, must grandfather existing systems (including units in production) if force relocation of forward links

- Forward links should be licensed for 250 KHz per system for a total of 500 KHz at 924.89-925.39; this preserves existing consumer and service provider investment (tens of thousands of units in use already in this spectrum).

- No need to worry that there will be lack of competition for vehicle location services because in addition to the two wideband systems, there will be competition from GPS, Lojack type homing devices and new location technologies in PCS spectrum.

MYTH: GPS CAN DO EVERYTHING THAT TELETRAC DOES

- GPS cannot do stolen vehicle or emergency alert (e.g., panic or roadside assistance)

- GPS is not accurate in urban areas

  - Satellite systems require line-of-sight signal reception for accuracy

- GPS systems are cost prohibitive to small businesses